

Washington State Energy Strategy Update

Energy Information and Data

The energy information and data contained in this document begins to collect in one place the information needed to support the Washington State Energy Strategy Update. The information responds to questions from the members of the Energy Strategy Advisory Committee and to questions raised in a report produced in Spring 2001, *Q & A Concerning Impacts of Current Energy Situation on Washington States Economy* (available at website). This is a working document. In some cases, the data presented here raises new questions that we are looking into. We continue to seek answers to some questions that have been raised by committee members. Your feedback on the information presented in this document and help in prioritizing our activities is welcome.

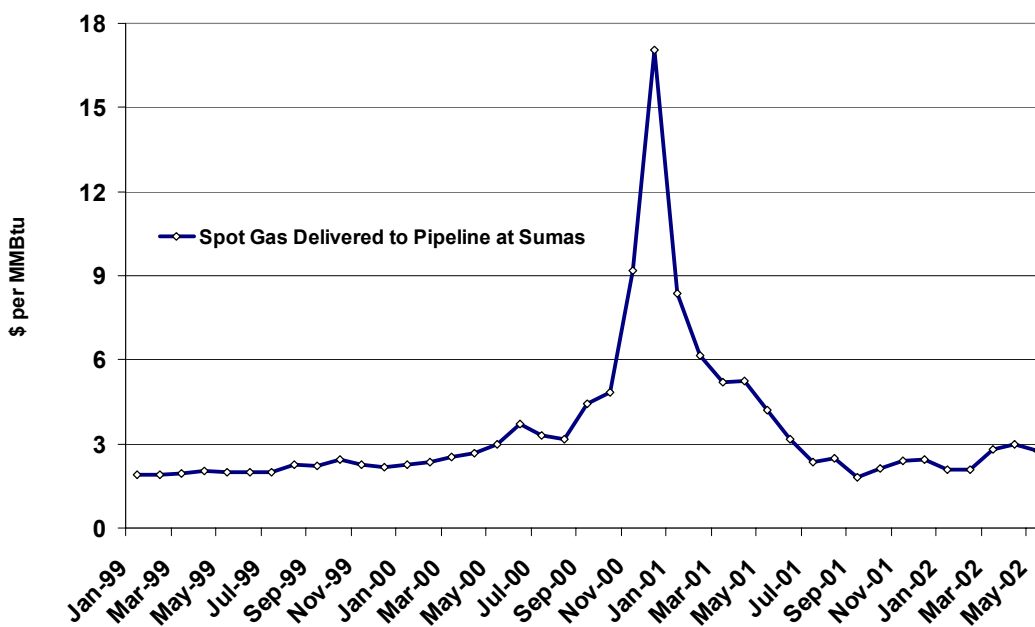
The information is presented in a question and answer format. Each question is followed by a brief explanation, figures or tables responding to the question (Indicators), and additional questions we are considering.

1. What happened to *wholesale* energy prices in Washington?

Wholesale energy prices increased significantly during the energy crisis, but have returned to pre-crisis levels.

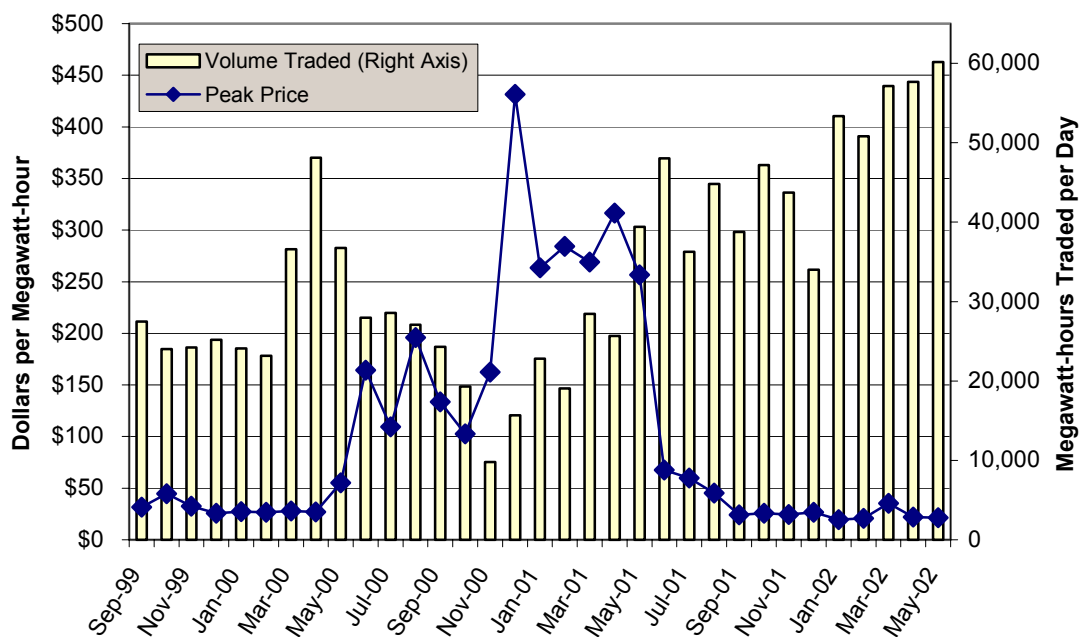
Indicators: Wholesale natural gas prices at Sumas; Wholesale electric prices at mid-Columbia hub (volume-weighted averages and daily on-peak values)

Monthly Natural Gas Spot Price

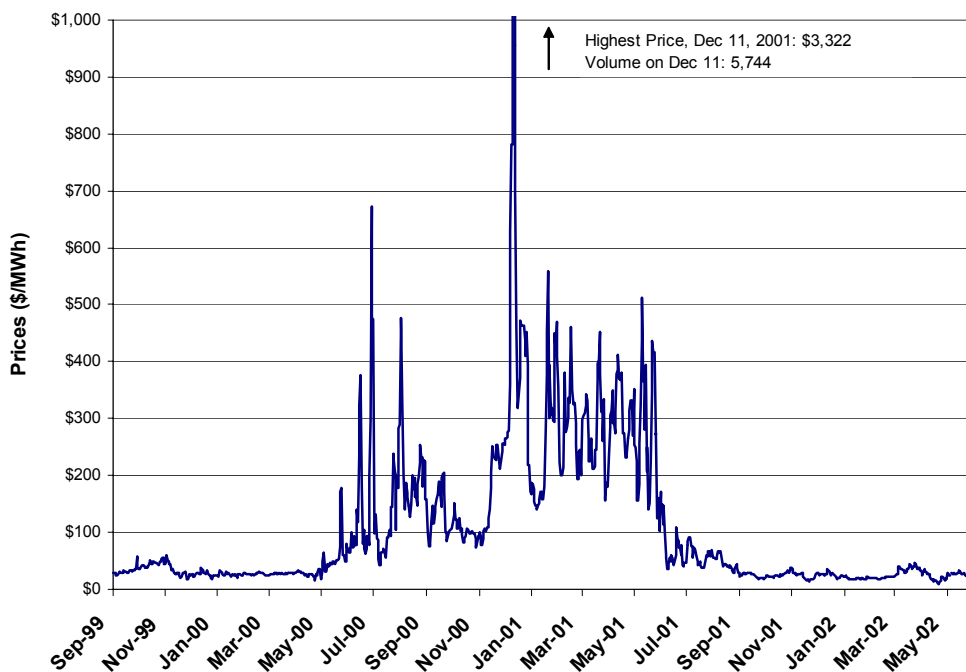


Dow Jones Power Prices at Mid-Columbia

Monthly Volume-Weighted Averages

**Mid-C Firm, On-Peak Electricity Prices and Volumes**

Sept 99 - June 02

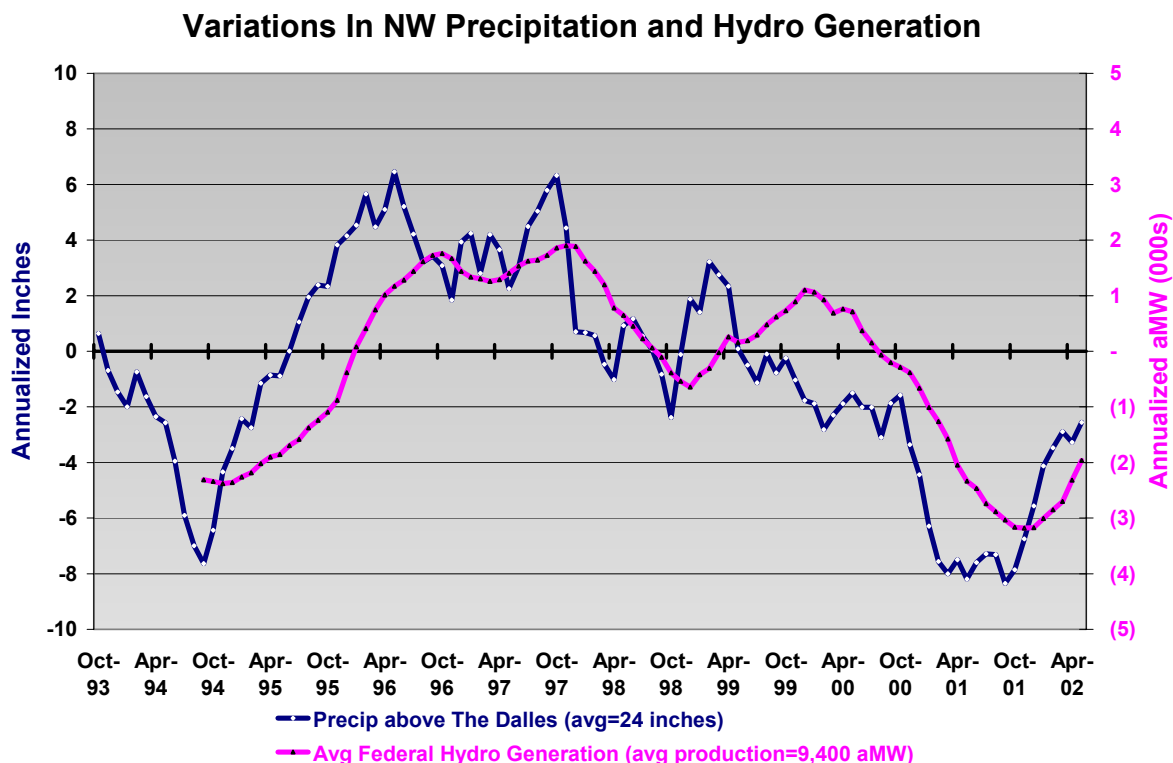


Remaining Questions: How much of state natural gas sales are made on the spot market versus long-term contract? What is the percent of mid-Columbia volume sales relative to the state total? What is the historical pre-crisis average price?

2. What was the impact of the drought on electricity supply?

Hydro generation capacity dropped significantly due to the drought.

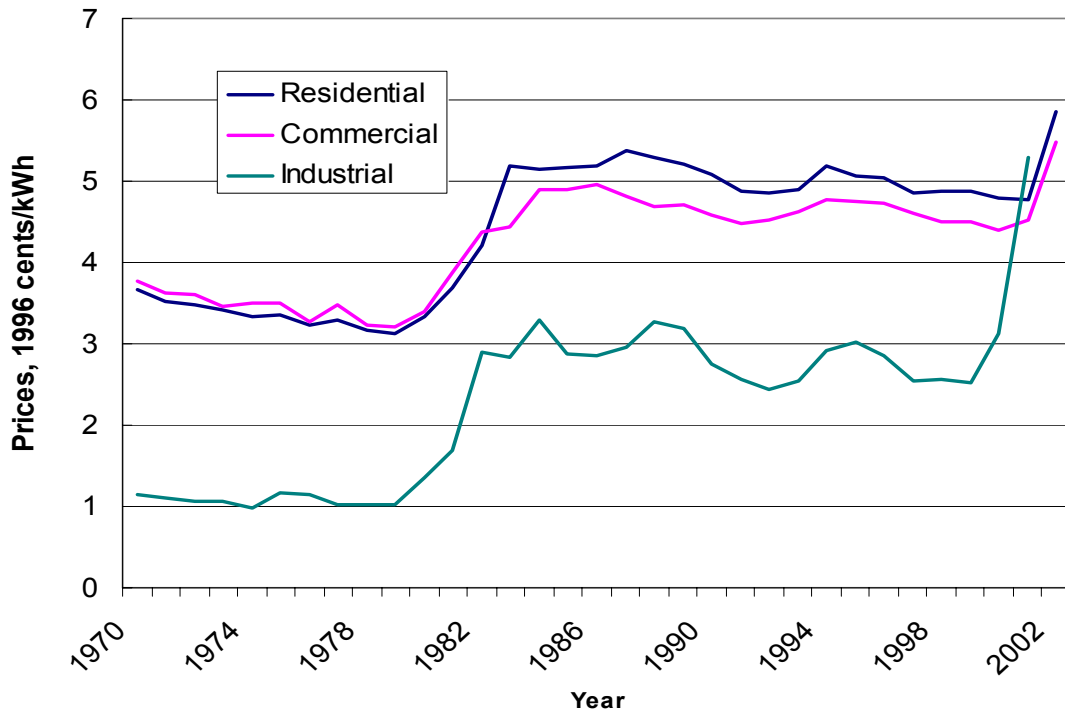
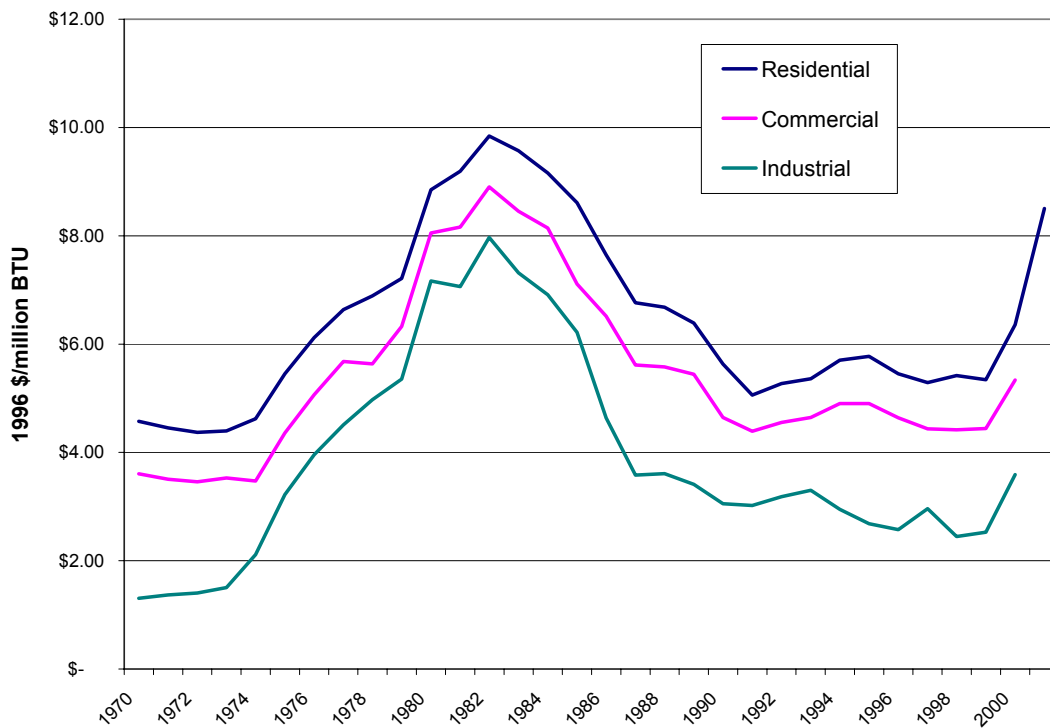
Indicator: Variation in Federal Columbia River Power System (RCRPS) hydroelectric production relative to precipitation above The Dalles.



3. How have retail natural gas and electricity rates in Washington changed as a result of the west coast energy crisis?

Retail natural gas and electricity rates have increased.

Indicator: Electricity and natural gas price trends by sector. (Note that these data only account for sales made through retail utilities. Natural gas prices for 2002 and 2001 (except residential) are not available.)

Retail Electricity Prices by Sector, Washington**Historical Natural Gas Prices in Washington**

Remaining Questions: Identify explanations for the significant increase in industrial electricity prices in 2001.

4. How do retail electricity and natural gas rate increases affect Washington's "average" household and commercial business?

Average electricity bills have increased around 30% and natural gas bills by over 60%.

Indicator: Show the change in the average household and business electricity and natural gas bill for 2002 relative to 1999. Note that these estimates assume the same level of consumption in 2001/2002.

Electricity Expenditures		1999	2002 Estimated	Difference
Annual expenditures per residential customer	\$	688.78	\$ 874.75	\$ 185.97
Monthly expenditures per residential customer	\$	57.40	\$ 72.90	\$ 15.50
Annual expenditures per commercial customer	\$	4,593.69	\$ 5,971.80	\$ 1,378.11
Monthly expenditures per commercial customer	\$	382.81	\$ 497.65	\$ 114.84

Natural Gas Expenditures		1999	2001 Estimated	Difference
Annual expenditures per residential customer	\$	541.13	\$ 898.28	\$ 357.15
Monthly expenditures per residential customer	\$	45.09	\$ 74.86	\$ 29.76
Annual expenditures per commercial customer	\$	3,063.15	na	na
Monthly expenditures per commercial customer	\$	255.26	na	na

Remaining Question: Also show changes in consumption per residential and commercial consumer. What is the trend in residential electricity expenditures per household?

5. As a result of the west coast energy crisis, how do energy prices in Washington compare to other states?

Washington's relative ranking has declined and it is no longer the low cost state for electricity.

Indicator: Compare retail electricity and natural gas rates in Washington relative to other states by sector for the last several years. The values in the table are rankings relative to other states. Natural gas prices are not available (na) for 2002 and for the industrial and commercial sectors in 2001.

Washington State Ranking		(50=lowest; 1=highest)		red = estimate	
Electricity Prices					
	YTD 2002	2001	2000	1999	
Residential	41	49	50	50	
Commercial	32	45	49	49	
Industrial	na	12	45	50	
Natural Gas Prices					
	YTD 2002	2001	2000	1999	

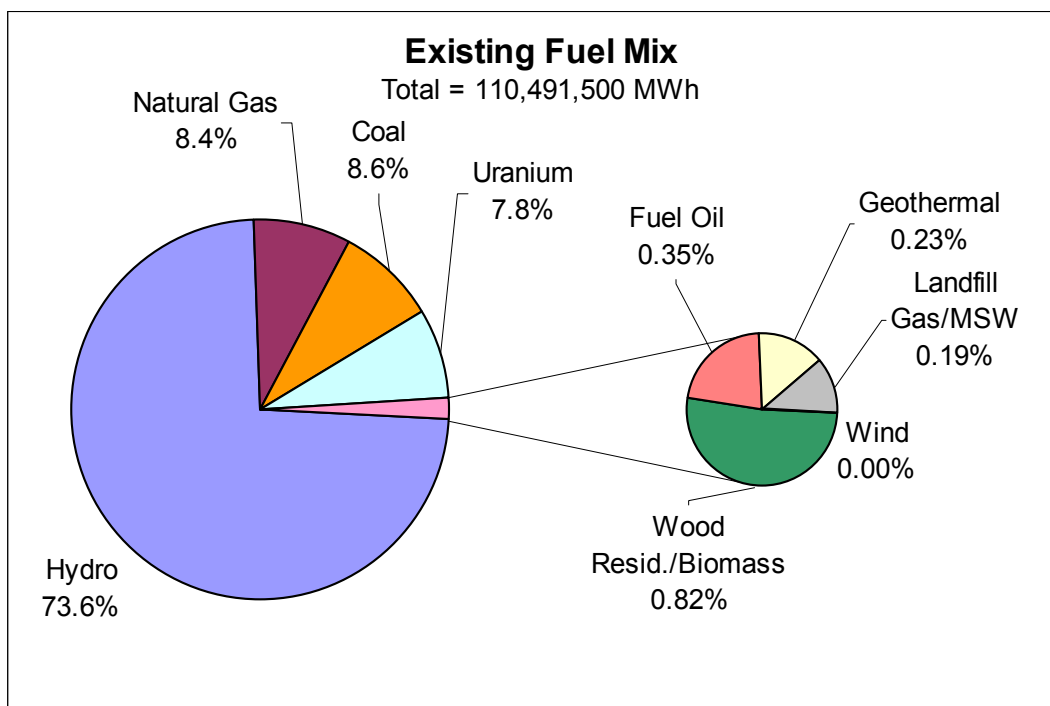
Residential	na	26	37	35
Commercial	na	na	34	33
Industrial	na	na	42	46

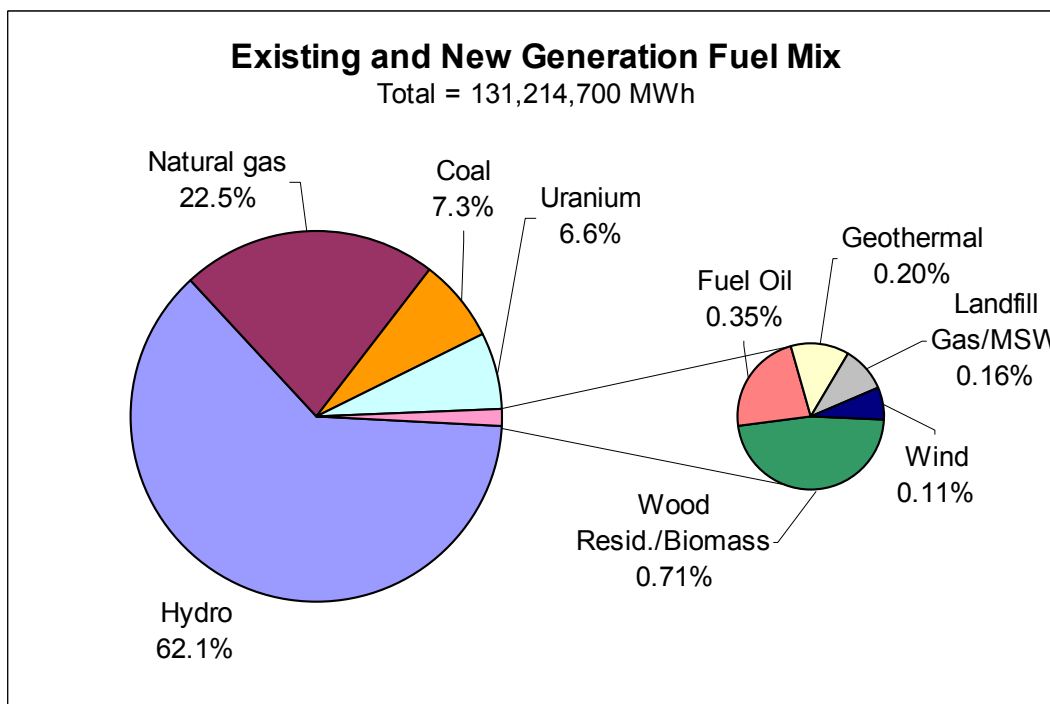
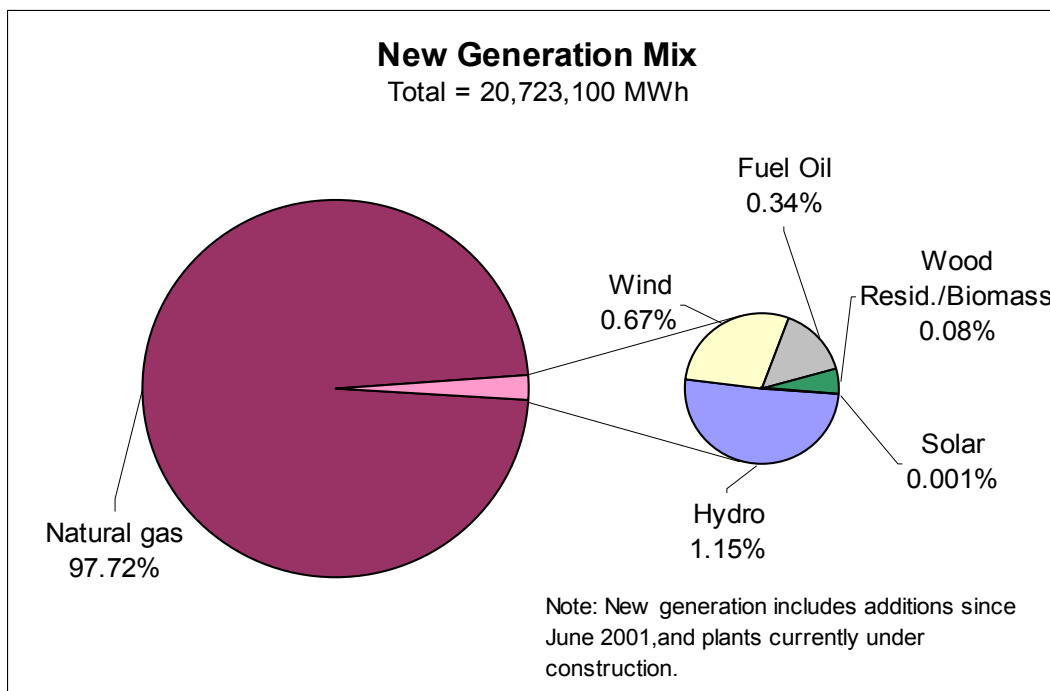
6. How does new generation influence the diversity of generation in the state?

Washington's generation mix is dominated by hydro-electric production, but new generation is predominately fueled by natural gas.

Indicator: Show the mix of new generation in Washington State along with current generation. Combine the two to show the mix of current generation with new generation.

Note: Existing fuel mix is based on actual generation in 2000 from Washington's fuel disclosure database. New generation mix is based on additions since June 2001 and plants currently under construction using estimated capacity factors.



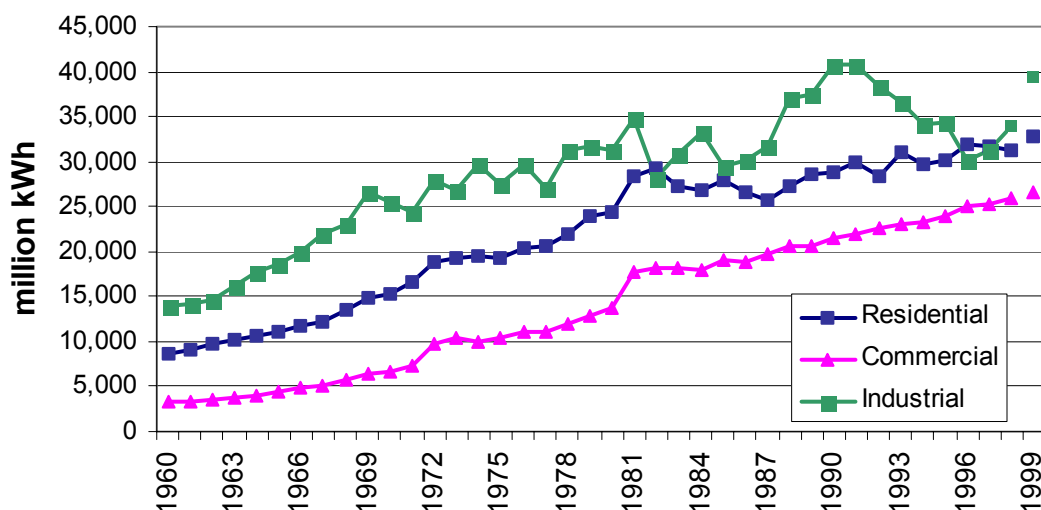


7. Where is growth occurring in electricity consumption in the state?

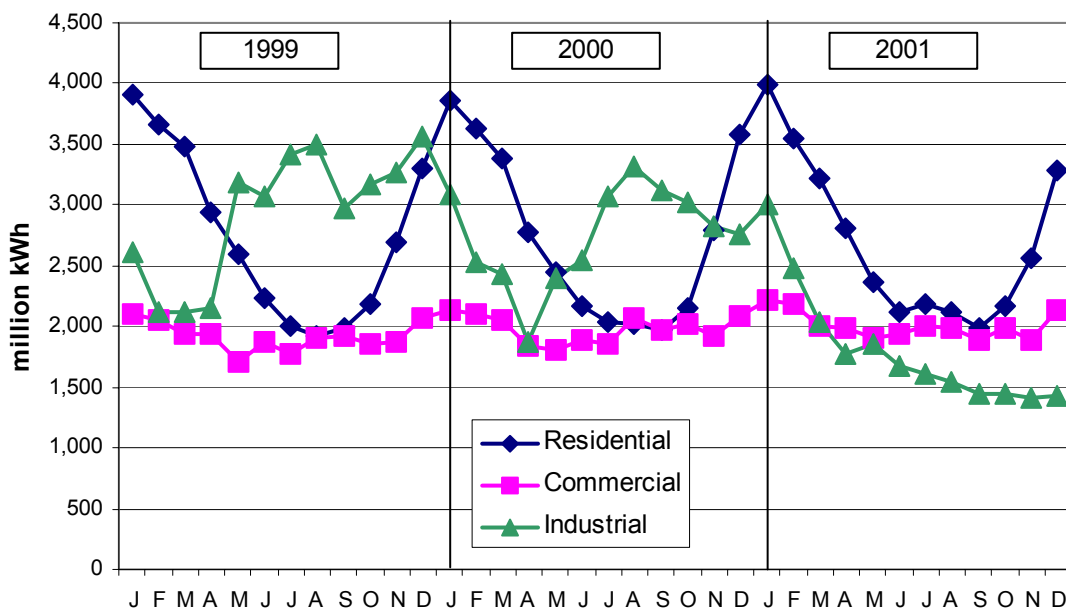
Historically electricity use has been growing, but recently industrial use has declined and residential and commercial use is flat.

Indicator: Show electricity consumption trends by sector.

Washington State Historical Electricity Consumption by Sector



Washington State Electricity Retail Sales by Sector



Remaining Questions: These data include only retail electricity sales. Check if it is possible to identify non-retail industrial electricity sales. Also consider the extent to which recent declines in consumption will continue.

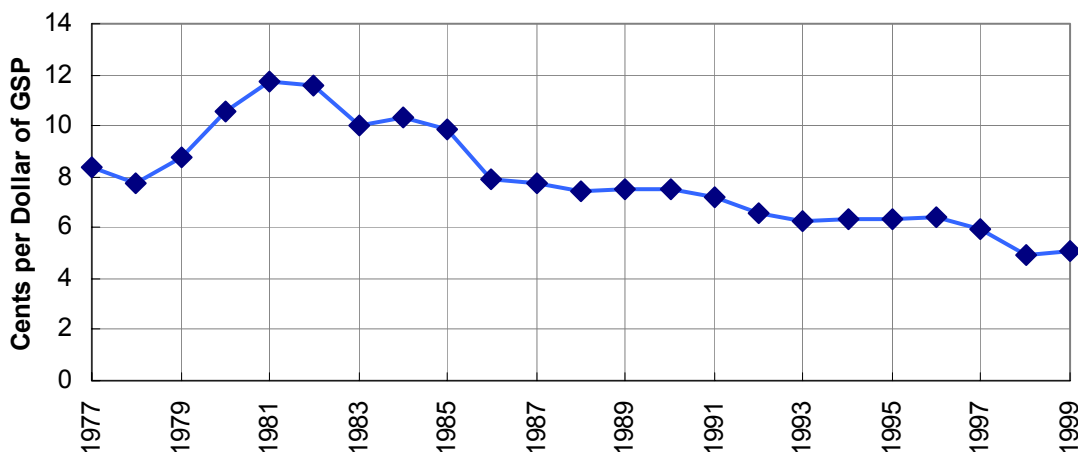
August 13, 2002

8. How does growth in electricity expenditures relate to gross state product?

Historically, electricity expenditures have been declining relative to gross state product.

Indicator: Show electricity expenditures per gross state product over time.

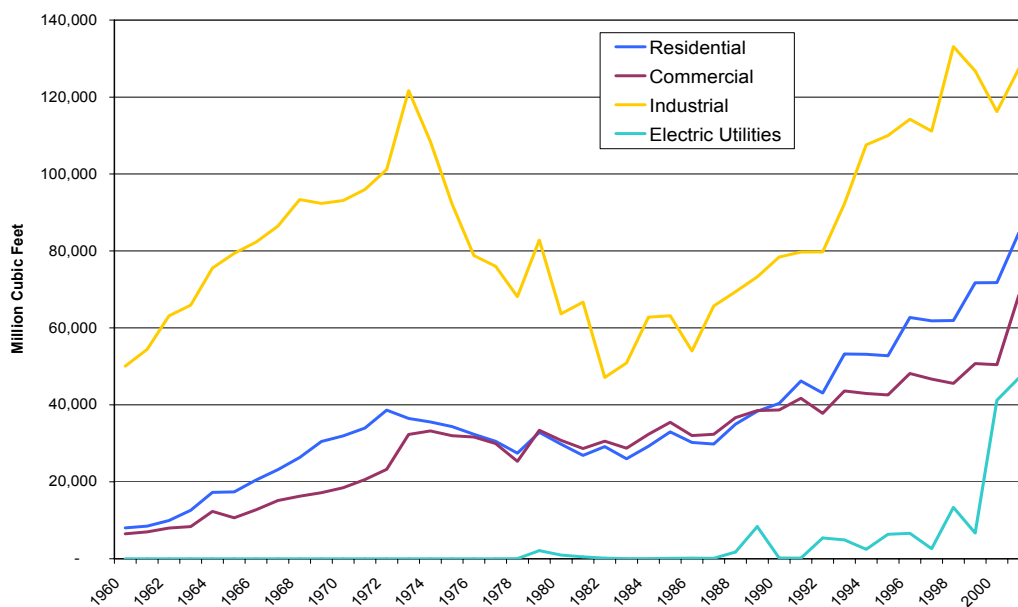
Washington State Energy Expenditures per 1996 Dollar of Gross State Product

**9. Where is growth occurring in natural gas consumption in the state? Is there any evidence of increasing consumption for electricity generation?**

Natural gas consumption has more than doubled since the early 1980's.

Indicator: Show natural gas consumption trends by sector including natural gas for generation. Note: The graph only includes natural gas use for generation by utility generators.

Historical Natural Gas Consumption

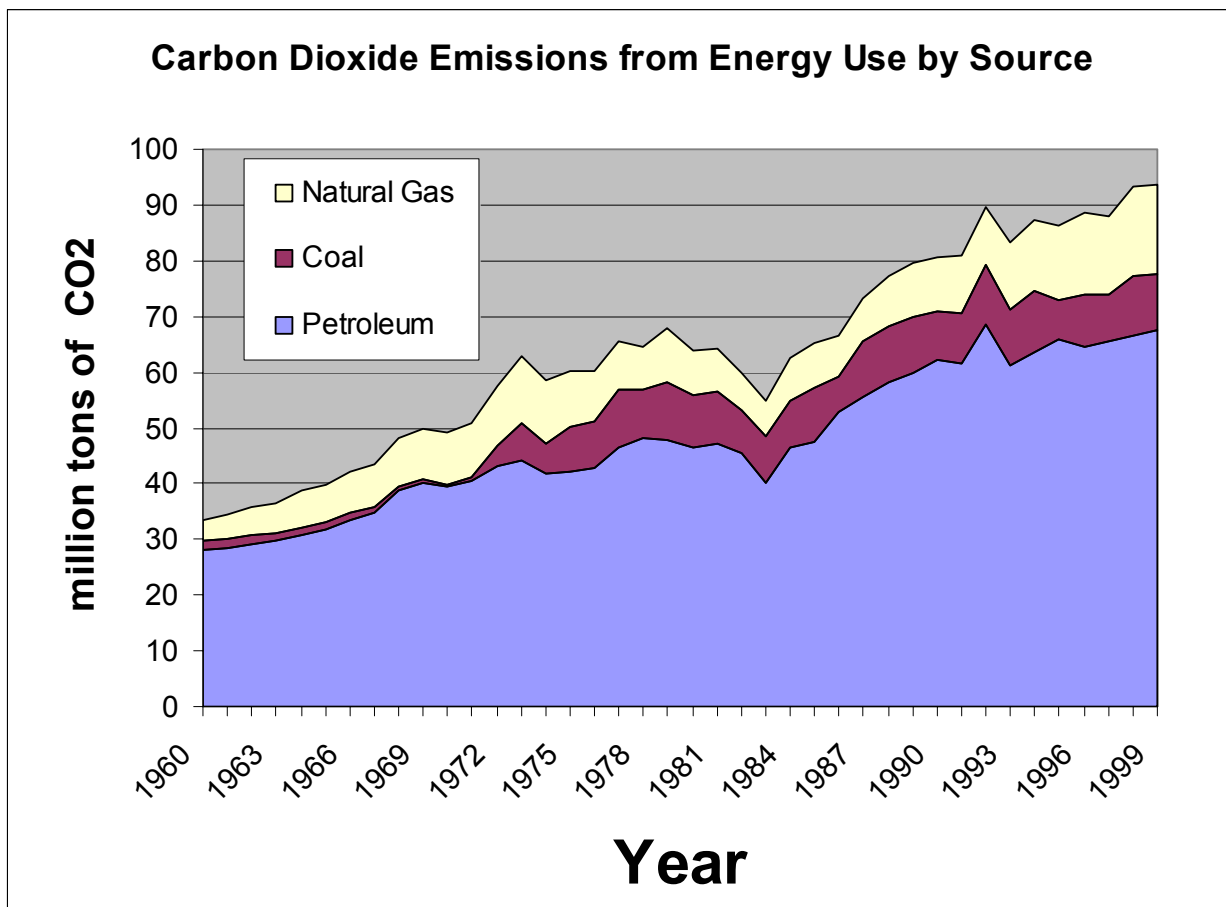


Remaining Question: What is the trend in natural gas consumption for electricity generation by non-utility generators?

10. What is the impact of energy consumption in Washington on the production of greenhouse gases?

Emissions from the consumption of petroleum products (primarily for transportation) are the major contributor to greenhouse gases in Washington.

Indicator: Show greenhouse gas emission trends by fuel source.



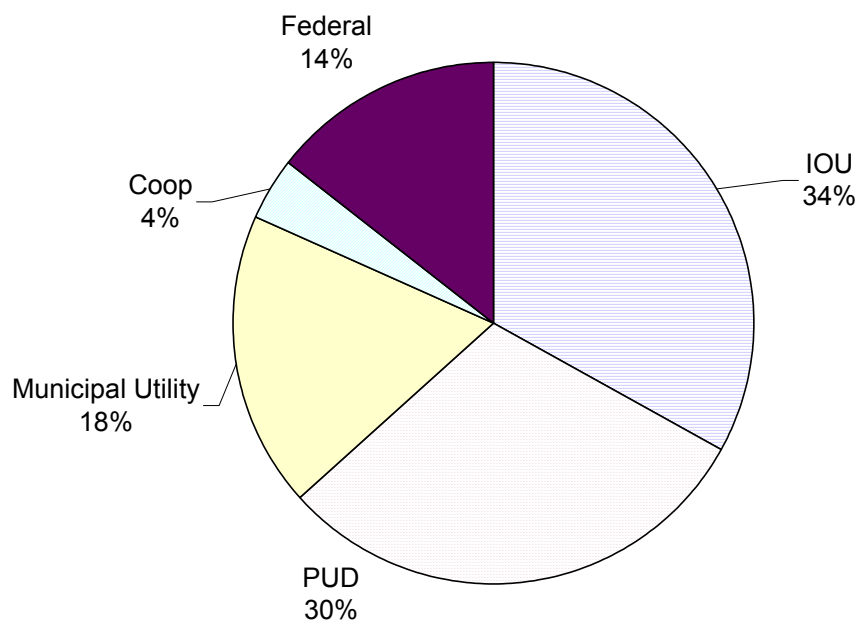
Remaining Question: Update the data with 2000 and 2001 values.

11. What is the mix of utility types in Washington?

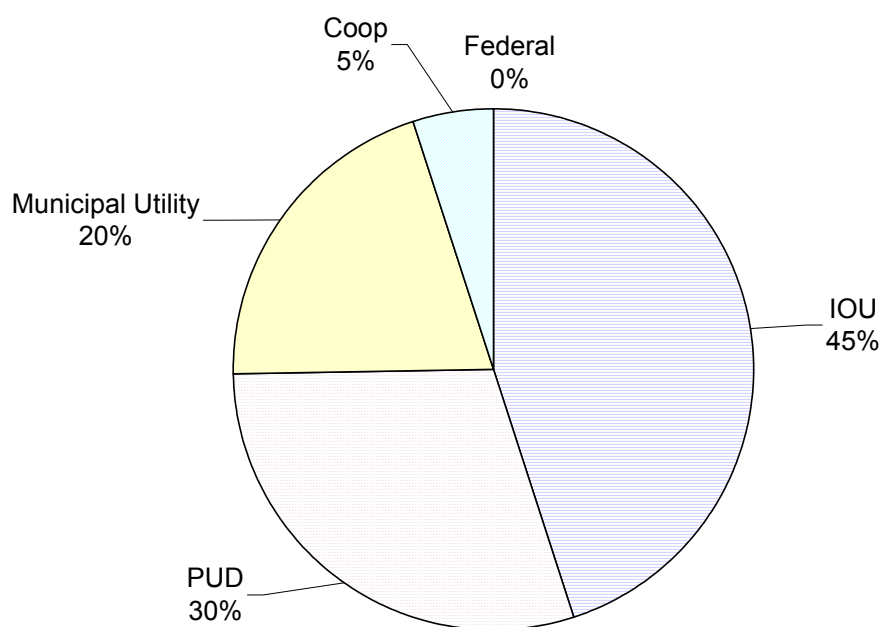
Publicly-owned utilities make up a significant share of Washington's electric utilities.

Indicator: Show the mix of utilities by kWh sales and customers.

Washington State Electric Utility Sales in 2000 by Class of Ownership



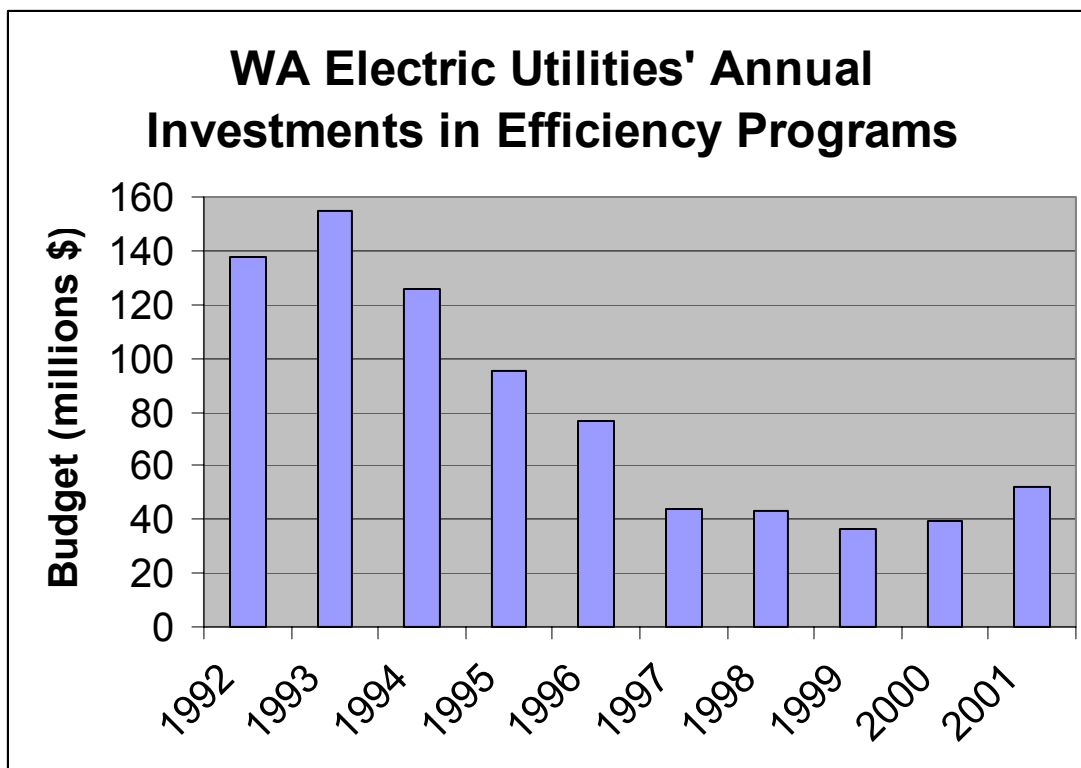
Washington State Electric Utility Sales in 2000 by Class of Ownership



12. What is the level of investment in energy conservation in Washington?

The level of conservation investment in Washington has declined since the early 1990's, but is beginning to rise again.

Indicator: The trend in Washington utilities' investments in energy efficiency programs.



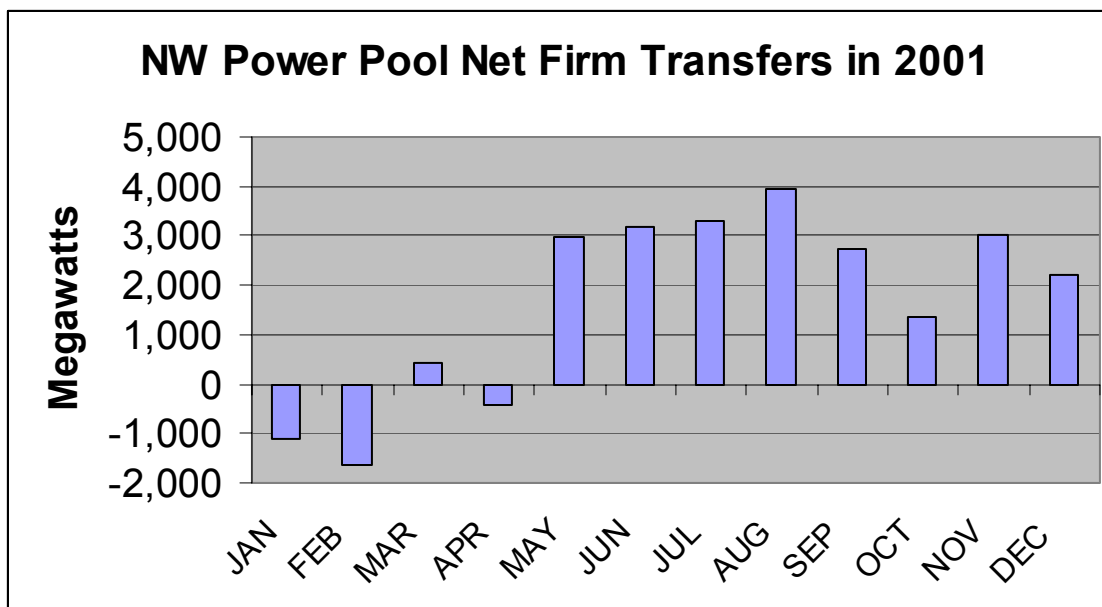
Remaining Questions: What are the conservation savings values by state? What portion of this savings is due to contributions from BPA? What percentage of conservation spending comes from building users and what percent from utilities or other sources?

13. What is the electricity flow into and out of the region?

In 2001 the Northwest Power Pool was a net exporter of power during much of the year.

Indicator: Net firm transfers of power for 2001 for the Northwest Power Pool U.S.

System. Note: exports are positive and imports are negative.



Remaining Question: Consider historical trends of imports and exports.

Other topics and questions to be considered:

- More detailed information on hydro facilities in the region is currently being gathered
- More detailed utility rate information at the utility level
- Information on the effects of the energy crisis on Washington utilities (e.g. changes in utility bond ratings; dividends/stock value for IOUs)
- Information on the adequacy of the supply-demand balance and availability of resources to meet load growth
- Electricity usage per worker in the state
- Projected capital spending needs in the state for building transmission lines, and acquiring cost-effective conservation and renewable resources, etc.